



The Monthly Newsletter of the Surrey Amateur Radio Club

July 2010

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The **SARC Communicator** is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.



100 Communicators

CELEBRATING 10 YEARS OF THE SARC COMMUNICATOR

As your new **SARC Communicator** Editor, I would like to thank Fred Orsetti for his tireless efforts over the past 10 years in bringing you this publication.

Until recently, I was not aware that Fred had published 100 editions of this monthly newsletter. This is quite a feat! As editor of several newsletters of organizations that I have been involved with, I appreciate the amount of time and effort that is involved in getting a regular publication out on time and Fred has achieved a remarkable milestone.

The first club Bulletin was conceived by Bob Searle, VE7CHB, nurtured by Doug Moore, VE7CBM and finally adopted by Carl Bertholm, VE7CLC. Over the years it has proved a very valu-

able asset to the club in keeping members informed.

Over the next few months you will see some changes and new features as we strive to make a great newsletter even better. Our goal is to attract a larger readership and member base and to involve both our YLs and younger members, the latter being the future of our hobby.

I believe that a great newsletter should be both entertaining and informative. Your suggestions and ideas are welcome and I encourage you to be involved and to share your experiences in the hobby.

- John Schouten, VE7TI
ve7ti@separs.net

2010 Field Day Report

Over 40 members of SARC, LARA and SEPARS worked together to make what many describe as the "best Field Day Ever". For the first time in recent memory, the combined group was able to have three stations running around the clock on SSB, CW and digital modes using Go Kit radios, four towers with tri-band beams and several wire antennas. This shows what can be accomplished in a truly cooperative effort between the three organizations, with each group making contributions to a success that would not be possible individually.

Operating all stations within the large tent was a real plus in promoting the team spirit. The satellite station was a big hit with visitors, and the GOTA station was busy most of the time with the

young crowd. The food was excellent and the public interest high. Two MLAs and a Surrey Councillor visited and asked many questions of their hosts. SEPARS and LAREC display tables both enjoyed serious interest from the public.

Will VE7LSY be the Canadian 3A winner for this year's Field Day? Hard to say, but we did make just under 900 HF contacts. Results will be revealed when the final score is tallied. There are too many contributors to the success of this event to be named individually, but you know



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Gary Skett VE7AS
Chris Zetner VA7CMZ

(Continued from page 1)

who you are. Let your Executive know your ideas for improvement - we will keep notes and endeavour to make next year's FD even better.

- John Brodie, VA7XB
va7xb@separs.net



More Field Day photos on the web at:
<http://picasaweb.google.com/separ.mail/FieldDay2010#>



QRM News Clips

The 2010 SARC Basic Amateur Radio Course

The Surrey Amateur Radio Club will once again be presenting a Basic Amateur Radio course starting in the fall. Gary Skett, VE7AS has agreed to teach the course and will be following the outline published in the Canadian Amateur Radio Basic Qualification Study Guide, used by almost all club licensing courses. This Study Guide has been carefully matched to the examination re-

quirements as defined by Industry Canada to ensure that everything is covered.

The course fee will be \$120 which includes all materials, refreshments and the exam fee. The classes will be held at the Terasen Gas complex on Fraser Highway.

If you know of someone looking to obtain their license be sure they are aware of this opportunity.



The HamInfoBar

Once in a while a 'must-have' application comes along. The HamInfoBar (Browser Toolbar), designed by British Ham G0DPC, was launched on August 10th 2007 with the aim to serve radio hams & short wave listeners with a wealth of radio related information that can be accessed while surfing any web page on the internet! HamInfoBar is 100% freeware and promises to remain that way. It requires NO registration and contains NO spyware. It is available for both Microsoft Internet Explorer and Firefox (Windows/Mac/Linux) in about a dozen languages. Go to www.haminfobar.co.uk to learn more or to download.

Ham Radio Deluxe

Free Amateur Radio Software for Windows

Ham Radio Deluxe (HRD) is a suite of free Windows programs providing computer control for commonly used transceivers and receivers. HRD also includes mapping, satellite tracking and the digital mode program Digital Master 780 (DM780).

HRD is designed for Windows 2000 or higher (XP, Vista, 7), also Internet Explorer 6.0 (or higher) is required. It may work with Windows 98 but this is not supported. The policy is to support Windows versions which are supported by Microsoft.

Installation is simple, just Download, Install and Start!

The suggested minimum computer specification is:

- HRD: 500MHz CPU, 512MB RAM and 20MB of disk storage.
- DM780: 1GHz CPU, 1024MB RAM and 50MB storage (or more if using SSTV). DM780 uses more resources than HRD when decoding many signals simultaneously.



You may obtain further information and a free download at <http://www.ham-radio-deluxe.com>

SEPARS Report

John Schouten VE7TI

On Tuesday, July 13th, after the regular SEPAR and SARC weekly nets, we scheduled a 6 metre HF net to explore our capabilities in that band.

The lowest of the VHF bands, 6 metres is often referred to as the 'magic' band. The band is unpredictable, and that is what makes it a challenge and fun. SSB and CW that takes place at the bottom of the band. FM work, including repeater operation, takes place further up this four-megahertz chunk of VHF spectrum.

Six is a very popular band for newly licensed hams because it is VHF and can be worked with even a basic license. At the peak of the sunspot cycle the magic band can open up to international DX. The major propagation mode on six is during the summer months and is via "SPORADIC-E" or "E_s". Starting about mid-May through to mid-August, peaking around early July, the band can open at any time via this fascinating mode. Typically, E_s will peak in the morning and in the late afternoon and evening hours. From south-west B.C., most E_s openings are single-hop, and favor the south-western states from California to Colorado. Several times each summer, openings will extend out to the eastern states, eastern Canada and down to the southern states. There always seems to be at least one or two openings via multi-hop E_s into the Caribbean each summer but these are usually in the morning and short-lived. On lucky openings

with double and triple hop E_s skip, QSOs can be had with the US, Caribbean islands, Central America, South America, Alaska, Hawaii and even Europe.

Six meters is also a super local "groundwave" band. Signals on six theoretically propagate about a third farther than two metres. On SSB and CW, a modest station can have good ground wave propagation out to about 50 miles plus.

Groundwave works best when both stations utilize an antenna of the same polarization; either horizontal or vertical. Since most CW and SSB stations that chase grid squares and DX use a horizontal yagi, it makes sense to have available a horizontally polarized antenna. Two stations communicating by groundwave with cross-polarized antennas, such as one with a dipole and one with a vertical, can suffer up to 20 dB signal reduction. This amounts to over three "S" units loss. Cross polarization is of no consequence when working F2 or E_s skip as the aether can rotate the signal, it only affects close-in groundwave.

Two of our stations were using horizontally polarized antennas and the remainder were on verticals. SSB was fraught with noise and was disappointing. The FM test was much more successful with most stations able to copy each other, some at S9+30. This showed a lot of promise.

By popular request the 6m test will be repeated next week (July 20th at 2030 hrs) when everyone has an opportunity to adjust their equipment and antennas.



Aerial Adventures 2010

Gary Skett VE7AS

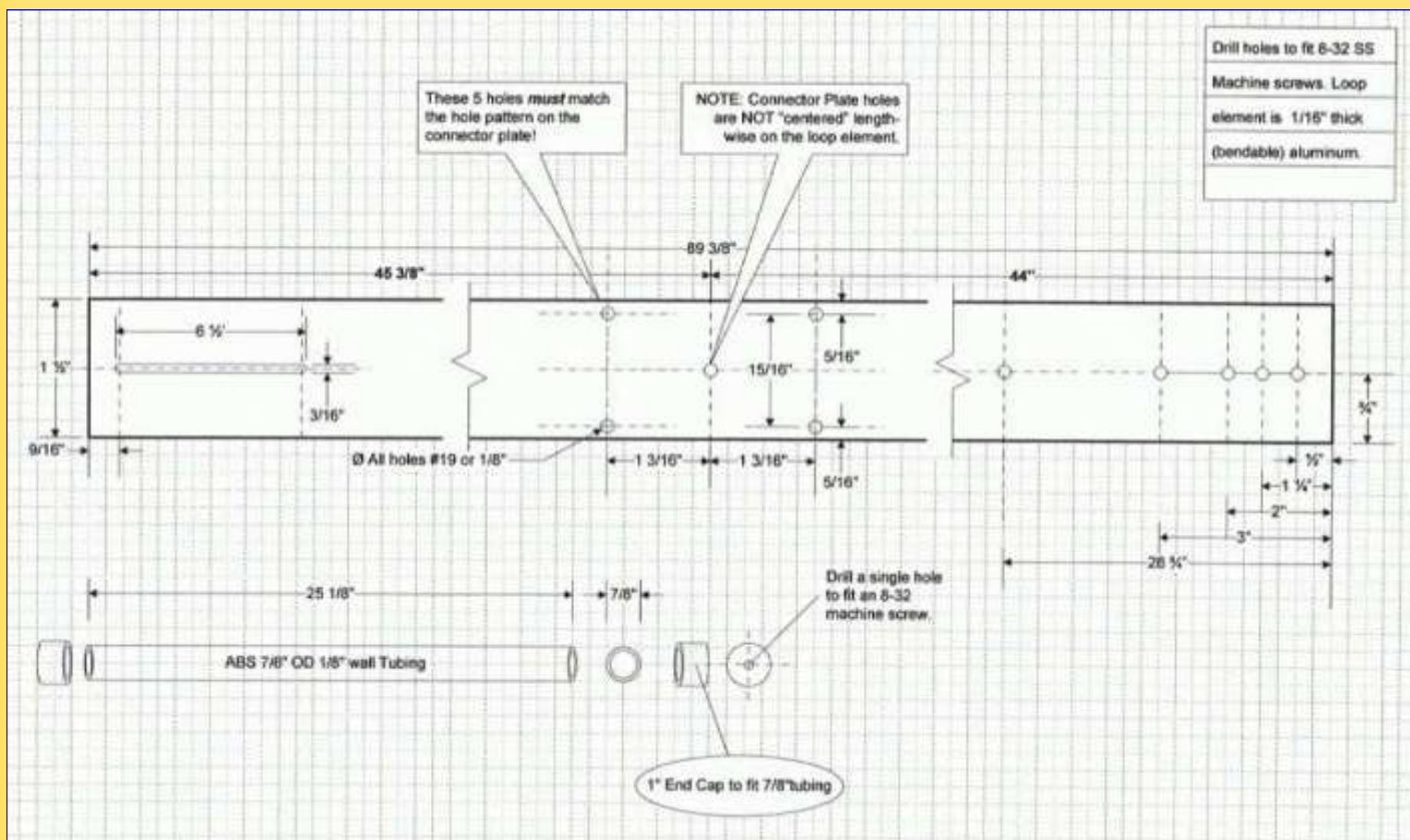
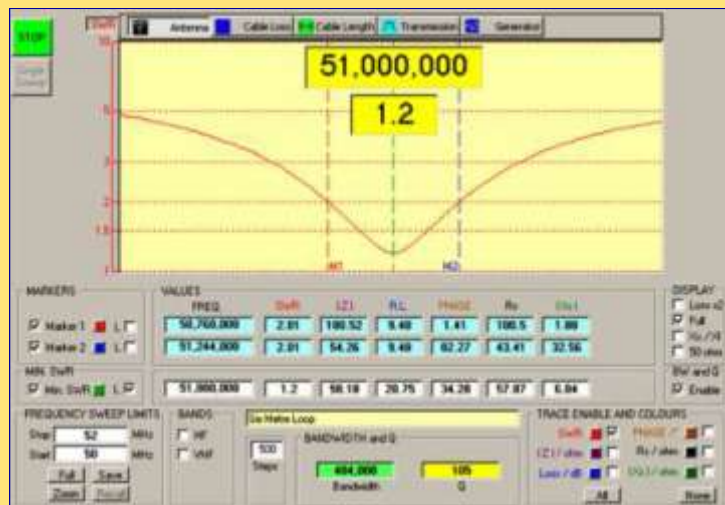
Six metres has had some interesting opens lately. Sunday evening I worked W7RN in Virginia City Nevada with a crystal clear 59+ signal on USB... was my first DM09 grid square on six metres. My antenna, a simple horizontally polarized $\frac{1}{2}\lambda$ dipole made with $\frac{1}{2}$ " aluminum tubing mounted low on the side of my roof. I was delighted to say the least. AND my 6 metre J-pole turns out to work wonderfully on the 10 metre band and I was able to take a New Caledonia QSO this weekend as well. Ham heaven for those of us not running a lot of power or fancy multi-element antennas on 70 foot towers. All my antennas barely clear the peak of the roof, and I am amazed every time I make a DX contact.

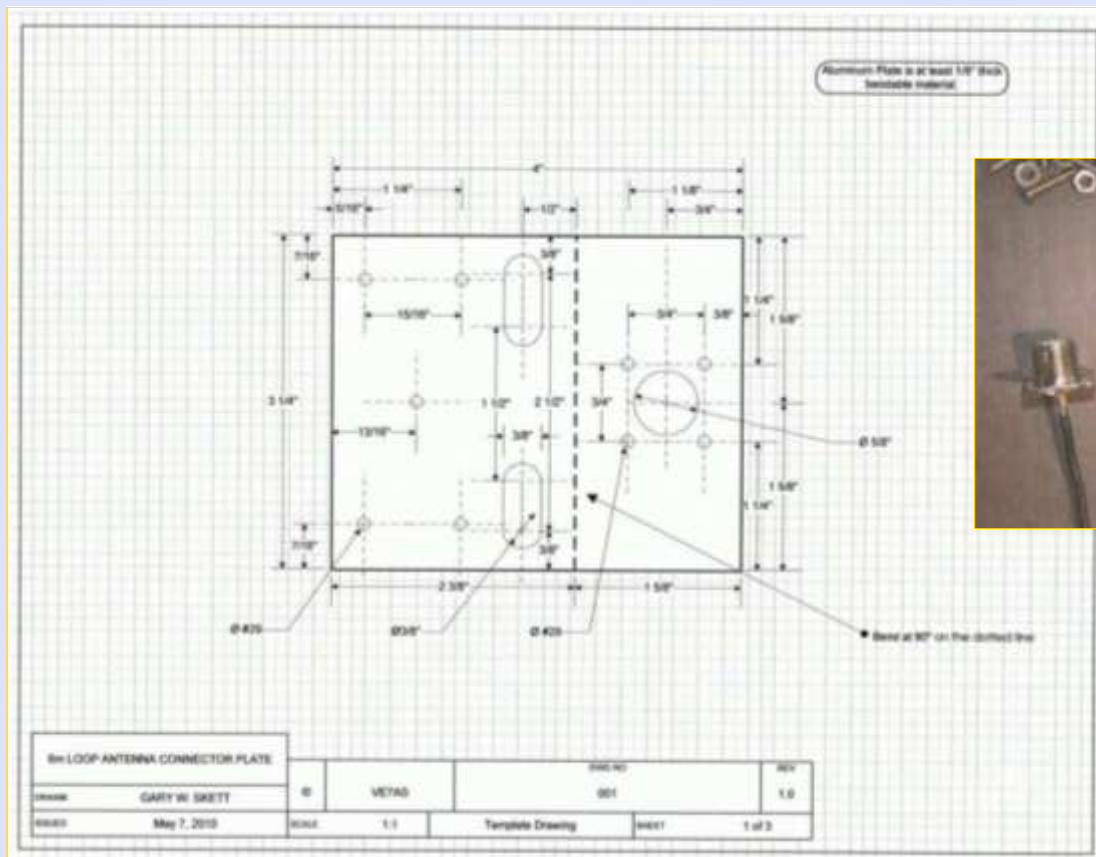
So, if you wanted to get on 6m and don't have room for, or the permission to install, a large multi element antenna, here is one that will - when conditions are right - allow you to get on 6 and experience the "magic band."

The antenna is not hard to build [assuming basic metal-working tools] and takes basically one piece of aluminum plate and one aluminum 'strap' which you can find at Metal Supermarket, ABC Traders or MetalMart, and one 1" dia. piece of ABS or PVC tubing with caps, a SO-239 and 17" of #12 solid copper wire. The strap is slotted to allow major tuning for what 500 KHz. Bandwidth you want to work.

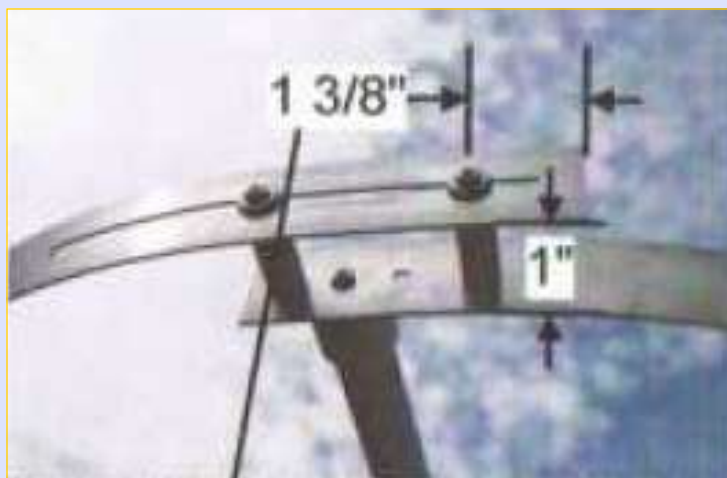
It's a loop, so its hi-Q and thus narrow band. But it's small (ish) and works horizontally or vertically.

This weekend project is inexpensive, yields good SWR and works well with an auto tuner. Tune it for 50.125 and enjoy some DX Fun. Parts or assembled 6m loops can be acquired from me at www.radiotronics.ca



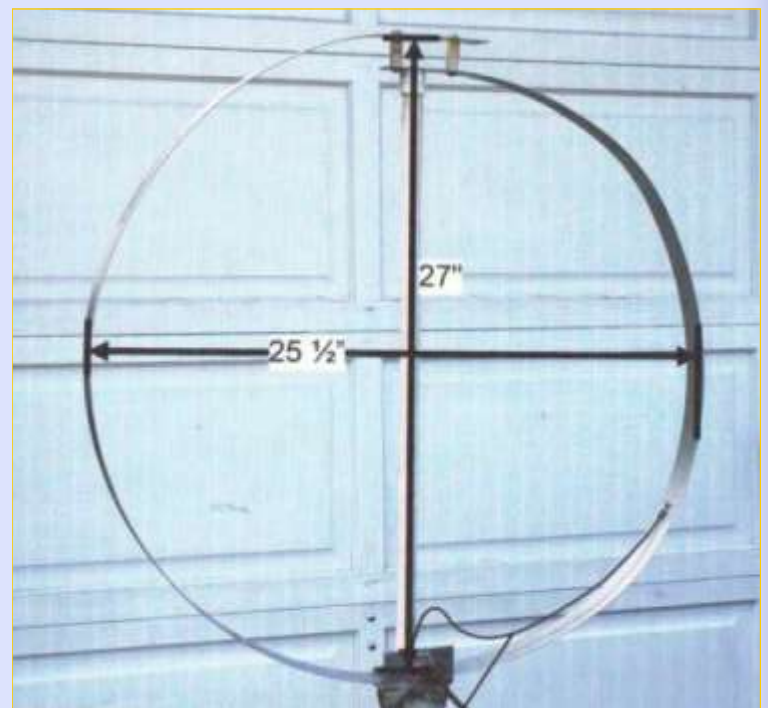


Above
The hole pattern on the antenna element must match the connector bracket.



Adjust this to obtain the desired initial resonant frequency “bandwidth”.

*Light travels faster than sound.
Which is why some people appear bright
until you hear them speak....*



10-14AWG solid copper or aluminum wire exactly 17" long, shaped this way for minimum SWR. This will require a lot of "playing" to achieve the best results. Moving and shaping this wire has a HUGE effect on the resonant frequency and SWR.

Application Notes

Gary Skett VE7AS

Selecting the Proper Charger

Erik, my new BFF, just gave me some AGM batteries to enable me to run my entire ham station on 12vdc backup power... for days, if necessary! But if I am going to get 3-5 years service out of them, I needed to make sure they are charged properly and have the right float voltage.

Selecting the proper charger for your batteries is as important as your initial battery choice and must be sized correctly for your application to insure proper charging. There are four major factors to consider when selecting a charger.

1) Battery System Capacity

Battery capacity is usually expressed as ampere-hours. It is important that a charger's capacity be chosen with respect to the capacity of the batteries to which it is applied. An undersized charger cannot do a satisfactory job. Add the amp/hour rating of all batteries together, and enter in place of element "A" in the equation below.

2) Battery Condition

The condition of the batteries when the charger is applied is an important determinant of charger size. Expressed as a percentage of total charge, this figure indicates the percentage of the total battery capacity that needs to be replaced. This can be derived by using an accurate voltmeter on the battery system. (see the table below) Enter this number in place of element "B" below.

TABLE - APPROXIMATE STATE OF CHARGE

12 V	24V	32V	State of Discharge
12.6 or >	25.2 or >	33.6 or >	0%
12.4	24.8	33.1	25%
12.2	24.4	32.5	50%
12.0	24.0	32	75%
11.7 or <	23.4 or <	31.2 or <	Discharged

*Note: Wait at least 5 minutes after battery charging or discharging before checking open circuit voltage. This will allow the voltage to stabilize.

3) Recharging Time

The time allowed to recharge a battery system is a major determinant of the size of charger required. The shorter period of available charge time, the higher capacity charger required. Any load on the batteries during charging will increase recharge time. Determine your desired recharge time in hours and enter in place of element "R" in the equation below.

4) Battery Drain

Continuous average draw on the batteries should be less than the continuous rating on the battery charger; otherwise the charger will not be able to keep up with the batteries and they will gradually discharge. Enter the average continuous draw on the battery system in amperes in place of the element "D" in the equation below. The formula for determining battery charger size (in terms of continuous duty rating) is:

$$\text{Charger size} = (1.2 \times A) \times (B+D) \div R$$

A = Battery system capacity

B = Normal discharge when charger is applied, expressed as % of full charge.

R = Average recharge time expressed in hours

D = Continuous average draw on batteries in amperes.

Note: The 1.2 constant is used due to the natural recharge inefficiency of the lead-acid battery. For example, if 10 amp hours are drawn, 12 amp hours of recharge are needed due to heat and other losses associated with the chemical reaction. The constant also takes into account the reduced charge rate the battery will accept as it approaches full charge.

As an example; suppose your battery system consists of three 105 ampere hour batteries, giving the system a 315 Ah capacity. Also suppose when the charger is applied the system is 45% discharged, and the charger will be applied for 24 hours. In addition, your total station stand-by current is 5 amps continuous.

Using the equation from above to determine charger size: Min. Charger Capacity = $(1.2 \times 315) \cdot 45 + 5 \div 24 = 12$ amps. In this case a charger with a 12 amp continuous rating is required.

Other facts to consider:

a) The AC line voltage and frequency variations must be within the charger's specifications. Generally as line voltage diminishes, so does the charger's output.

b) Ambient temperature should not exceed the charger's temperature rating. Your charger should be thermally protected and have the circuitry to shut down if the temperature becomes excessive and re-start once the temperature falls below the cut-off. While this protects the charger, it will cause an increase in charging time.



Surrey-Langley Flea Market

This is an open-air flea market with circus-style tents for under cover table sales plus outside area for direct-from-vehicle sales, all in a rural park setting.

Buying and selling of used and new amateur radio items and electronics, with commercial exhibits, RAC table, and QSL bureau. Door prizes and raffle prizes total value \$1000. Raffle 1st prize is a weekend for two at Harrison Hot Springs Resort; 2nd prize is Grundig Globe Traveler G3 Radio; 3rd prize is hands-free Blue Tooth for your cell phone. Food and refreshments will be available. Vendors may set-up at 0830 hrs.

Prepayment will ensure your table or tailgate reservation.

- \$20 for table under circus-style tent (includes vendor's admission);
- \$15 for vehicle and tailgate vendors (bring your own table & chairs);
- \$5 admission for buyers.

To get to Campbell Valley Regional Park

Proceed south on 200th Street, then east on 8th Ave. to south park entrance and watch for signs to parking area.

For travelers from the US: from Hwy 99 (Peace Arch Border crossing) or 176th Street (Pacific Border crossing), take 8th Avenue exit and continue east as described above.

Overnighters can reserve at Hazelmere RV Park and Campground which is at 18843 8th Avenue. Toll free: 877-501-5007 or email: camp-ing@hazelmere.ca

Bring your handie-talkie radio - due to the large size of our venue, all announcements will be made by PA and broadcast on 146.780(-) no tone.

August 22nd from 1000 to 1400 hrs

CO-SPONSORED BY

The LANGLEY AMATEUR RADIO ASSOCIATION

www.langleyamateurradio.com

and The SURREY AMATEUR RADIO CLUB

www.ve7sar.net

contact Stan Brown VE7YSB
Phone: 604-534-8256 or 604-574-5060
sabcstan@shaw.ca

FOR MORE INFORMATION OR TO RESERVE
YOUR TABLE OR TAILGATE SPOT



'Net' Working Internet Resources for Hams

The Internet has become an invaluable resource. In this column we bring you some worthwhile links to Amateur Radio on the Internet. If you have found a site on the web that you think is informative or interesting, please let us know: ve7ti@separs.net

The first site you might want to have a look at is 'This Week in Amateur Radio' or (TWiAR) and it's international counterpart TWiARi at: <http://www.twiar.org/>. Billed as 'Amateur Radio's Up-to-the-Minute News Magazine of the Airwaves' each edition contains news stories about our hobby, weekly audio columns, and a look back at amateur radio history. The site has the latest amateur radio news from around the globe and it is broadcast both live via HF or as a downloadable or streaming file via the Internet. The content is entertaining, professionally produced and perfect for listening to on an iPod or other portable device while enjoying a walk. TWiAR International airs Sundays at 4:00 PM Eastern Time. To listen live, tune to WBCQ, broadcasting on 7415 Mhz.



Another site with some interesting content is the [YL Wiki](#). If you're not familiar with a Wiki, it is a 'collaborative web site set up to allow user editing and adding of content'. This wiki has gathered information about YL groups internationally. Of particular interest is a link to women who served Canada in the Norwegian Merchant Navy during WWII. Why Norway? They were not allowed to enlist here so they joined the Norwegian merchant fleet to serve as [wireless operators](#) or 'sparks'. Many of these ladies became hams after their service and, though most are now Silent Keys, some are still with us to share their experiences.

If you have a YL interested in the hobby, make sure they check out the [Canadian Ladies Amateur Radio Association](#) (CLARA). This group publishes a quarterly newsletter and promotes amateur radio nationally. CLARA conducts several weekly nets, both on HF and locally on 2m.



SARC President's Comments

John Brodie VA7XB



What Do You Want Surrey ARC to Be?

Amateur radio has many faces. It can be two hams communicating by hand-held radio on the VHF bands locally in casual conversation,

or talking to the world via IRLP or Echolink. The hobby to many consists of checking into nets and passing traffic on SSB, FM or CW. Others feel that chasing DX by CW operation on the HF bands truly represents ham radio in its purest form. Still others are into communicating by two-way exchanges via satellite or moonbounce. Contesting holds no appeals for some, but is the life-blood of many.

Equipping yourself with emergency radio gear and practicing for that possible disaster in service to the community qualifies as the facet of the hobby that gets support of the public and municipalities.

Digital modes, D-Star, radio direction finding, designing and constructing radio gear,

experimenting with antennas or public service through assistance at civic events and parades. What is your particular interest, and how can the Surrey ARC help you get the most from your hobby? Lots of questions, with each club having its own unique approach which may appeal to you. If we try and do it all, we will fail. Similarly if we focus on only a few things, we lose the support of those who have specific interests.

What kind of a club do you want SARC to be? Please give this some thought to this question over the summer and come back in September prepared to discuss your interests, your likes and dislikes, and your ideas for future meetings and activities. Those who speak out and let the Executive know what they want to see in the future will help us shape the future of the club. We do need your input.

One change that I support is to involve the Club members more in the planning of activities, rather than leaving it entirely to the Executive and Directors. In the meantime, I and the rest of the Executive and Directors wish you all a pleasant and relaxed vacation - enjoy, as it will be over all too soon.



Two SARC supported summer events: Field Day and Canada Day

...and finally The Last Word

The next meeting of the Surrey Amateur Radio Club will be held at 7:00pm on Wednesday September 8th 2010 at the PREOC Located at Green Timbers. Talk in on 147.36+ (110.9) 443.775+ (110.9)

BCDXC annual convention to be held on July 30, 31 and August 1st. If you are at all interested in DX, contesting or just plain rag chewing and would like to meet some of the top DXers and contesters this is your opportunity to see the best of ham radio. You can find out all the information by going to the BCDXC website <http://www.bcdxc.org>

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at PEP PREOC,
96th Avenue, Surrey

Weekly Club Breakfast

Friday at 0830 local time
ABC Country Restaurant located
at 600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 local time
on 147.360 MHz (+) Tone=110.9.

SEPARS Net

Tuesday at 19:30 local time
on 146.550MHz simplex.

Announcements & News

Ham Radio OpenAir Flea Market

Co-sponsored by the Langley and Surrey clubs. August 22nd from 10 to 1400 hrs. (see article pg 7)

Basic Amateur Radio Course

We have had a lot of interest in another Basic Course so we will be putting one on starting in October. The schedule will be published as soon as possible.

On the Web

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements may also be found on our web page at:
www.ve7sar.net

There's an excellent training manual at

<http://www.rac.ca/fieldorg/RACARESTrainingManual.htm>



SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible

on IRLP node 1980 and Echolink node 496228. On UHF we operate a repeater on 443.775MHz (+5MHz) Tone=110.9 and IRPL node 1463. Coming soon, a repeater at 224.000MHz (-1.6MHz).

VIA THE WEB

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